

- AA
Expt'd
Sub
P22
Chd*
- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction, said catalyst comprising a metal phosphide,
 - b) forming a shaped body from the product of step a),
 - c) removing at least part of the material from a surface of the shaped body of step b) to expose part of the catalyst,
 - d) treating the shaped body with an acid solution to activate the exposed catalyst of step c), and
 - e) metal plating the product of step d) in an electroless metal bath.

10. The process according to claim 9 wherein the metal phosphide is a ferrous phosphide.

11. The process according to claim 9 wherein the removal of material from the shaped body is carried out by contacting the shaped body with an alkaline solution.

12. The process according to claim 9 wherein the acid solution comprises an acid selected from the group consisting of sulphuric acid, hydrochloric acid, methane sulphonic acid, sulphamic acid, acetic acid, glycine, phosphoric acid, oxalic acid, naphthalene sulphonic acid, maleic acid, benzene sulphonic acid, trichloro acetic acid, and chromic acid.

13. The process according to claim 12 wherein the acid is sulphuric acid.

14. The process according to claim 9 wherein the acid solution has a pH of less than about 2.

15. The process according to claim 9 wherein the acid solution has a pH of less than about 1.

16. The process according to claim 9 wherein metal is initially deposited on the shaped body in the electroless metal

bath in less than about 10 minutes.

17. The process according to claim 9 wherein metal is plated on the shaped body at a rate of at least about 2 micrometers per hour.

18. The process according to claim 9 wherein the shaped body is plated with a metal selected from the group consisting of copper, nickel, silver, cobalt, gold, palladium, tin, and mixtures thereof.

19. A process for electroless plating of plastics comprising the steps of:

- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction,
- b) forming a shaped body from the product of step a),
- c) removing at least part of the material from a surface of the shaped body of step b) to expose part of the catalyst,
- d) treating the shaped body with an acid solution to activate the exposed catalyst of step c), and
- e) metal plating the product of step d) in an electroless metal bath to form an initial metal deposition on the shaped body in less than about 20 minutes.

20. The process according to claim 19 wherein the catalyst comprises a metal phosphide.

21. The process according to claim 20 wherein the catalyst further comprises compounds selected from the group consisting of silver nitrate, organo silver compounds, palladium compounds, metals, and mixtures thereof.

22. The process according to claim 19 wherein the catalyst comprises a ferrous phosphide.

23. The process according to claim 19 wherein the removal of material from the shaped body is carried out by contacting the shaped body with an alkaline solution.

24. The process according to claim 19 wherein the acid solution comprises an acid selected from the group consisting of sulphuric acid, hydrochloric acid, methane sulphonc acid, sulphamic acid, acetic acid, glycine, phosphoric acid, oxalic acid, naphthalene sulphonc acid, maleic acid, benzene sulphonc acid, trichloro acetic acid, and chromic acid.

25. The process according to claim 24 wherein the acid is sulphuric acid.

26. The process according to claim 19 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 15 minutes.

27. The process according to claim 19 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 10 minutes.

28. The process according to claim 19 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 5 minutes.

29. The process according to claim 19 wherein metal is plated on the shaped body at a rate of at least about 2 micrometers per hour.

30. The process according to claim 19 wherein the shaped body is plated with a metal selected from the group consisting of copper, nickel, silver, cobalt, gold, palladium, tin, and mixtures thereof.

31. A process for electroless plating of plastics comprising the steps of:

- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction,
- b) forming a shaped body from the product of step a),
- c) removing at least part of the material from a surface of the shaped body of step b) to expose part of the catalyst,
- d) treating the shaped body with an acid solution to activate the exposed catalyst of step c), and
- e) metal plating the product of step d) in an electroless metal bath to form an initial metal deposition on the shaped body in less than about 20 minutes and continuing metal plating to a metal thickness of at least about 20 micrometers.

32. The process according to claim 31 wherein the catalyst comprises a metal phosphide.

33. The process according to claim 31 wherein the catalyst comprises a ferrous phosphide.

34. The process according to claim 31 wherein the removal of material from the shaped body is carried out by contacting the shaped body with an alkaline solution.

35. The process according to claim 31 wherein the acid solution comprises an acid selected from the group consisting of sulphuric acid, hydrochloric acid, methane sulphonic acid, sulphamic acid, acetic acid, glycine, phosphoric acid, oxalic acid, naphthalene sulphonic acid, maleic acid, benzene sulphonic acid, trichloro acetic acid, and chromic acid.

36. The process according to claim 35 wherein the acid is sulphuric acid.

37. The process according to claim 31 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 10 minutes.

38. The process according to claim 31 wherein metal is plated on the shaped body at a rate of at least about 2 micrometers per hour.

39. The process according to claim 31 wherein the shaped body is plated with a metal selected from the group consisting of copper, nickel, silver, cobalt, gold, palladium, tin, and mixtures thereof.

40. A process for electroless plating of plastics comprising the steps of:

- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction,
- b) forming a shaped body from the product of step a),
- c) contacting the shaped body of step b) with an alkaline solution to remove at least part of the material from a surface of said shaped body to expose part of the catalyst,
- d) treating the shaped body with an acid solution to activate the exposed catalyst of step c), and
- e) metal plating the product of step d) in an electroless metal bath to form an initial metal deposition in less than about 20 minutes.

41. The process according to claim 40 wherein the catalyst comprises a metal phosphide.

42. The process according to claim 40 wherein the catalyst comprises a ferrous phosphide.

43. The process according to claim 40 wherein the alkaline solution comprises sodium hydroxide.

44. The process according to claim 40 wherein the acid solution comprises an acid selected from the group consisting of sulphuric acid, hydrochloric acid, methane sulphonic acid, sulphamic acid, acetic acid, glycine, phosphoric acid, oxalic acid, naphthalene sulphonic acid, maleic acid, benzene sulphonic acid, trichloro acetic acid, and chromic acid.

45. The process according to claim 44 wherein the acid is sulphuric acid.


46. The process according to claim 40 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 10 minutes.

47. The process according to claim 40 wherein metal is plated on the shaped body at a rate of at least about 2 micrometers per hour.

48. The process according to claim 40 wherein the shaped body is plated with a metal selected from the group consisting of copper, nickel, silver, cobalt, gold, palladium, tin, and mixtures thereof.

49. A process for electroless plating of plastics comprising the steps of:

- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction,
- b) forming a shaped body from the product of step a),

- 
- c) removing of at least part of the material from a surface of the shaped body of step b) to expose part of the catalyst,
- d) treating the shaped body with an acid solution to activate the exposed catalyst of step c), and
- e) metal plating the product of step d) in an electroless metal bath, at a metal deposition rate of at least about 2 micrometers per hour.

50. The process according to claim 49 wherein the catalyst comprises a metal phosphide.

51. The process according to claim 49 wherein the catalyst comprises a ferrous phosphide.

52. The process according to claim 49 wherein the removal of material from the shaped body is carried out by contacting the shaped body with an alkaline solution.

53. The process according to claim 49 wherein the acid solution comprises an acid selected from the group consisting of sulphuric acid, hydrochloric acid, methane sulphonic acid, sulphamic acid, acetic acid, glycine, phosphoric acid, oxalic acid, naphthalene sulphonic acid, maleic acid, benzene sulphonic acid, trichloro acetic acid, and chromic acid.

54. The process according to claim 53 wherein the acid is sulphuric acid.

55. The process according to claim 49 wherein metal is initially deposited on the shaped body in the electroless metal bath in less than about 10 minutes.

56. The process according to claim 49 wherein the shaped body is plated with a metal selected from the group consisting of copper, nickel, silver, cobalt, gold, palladium, tin, and mixtures thereof.

57. A process for electroless plating of plastics comprising the steps of:

- 24*
cont'd
GP
- a) compounding a granular plastic with a catalyst suitable for an electroless plating reaction, said catalyst comprising a ferrous phosphide,
 - b) forming a shaped body from the product of step a),
 - c) contacting the shaped body of step b) with a sodium hydroxide solution to remove at least part of the material from a surface of said shaped body to expose part of the catalyst,
 - d) treating the shaped body with a sulphuric acid solution having a pH of less than about 2 to activate the exposed catalyst of step c), and
 - e) copper plating the product of step d) in an electroless metal bath to form an initial copper deposition on the shaped body in less than about 20 minutes and continuing copper plating to a thickness of at least about 20 micrometers, wherein copper is deposited on the shaped body at a rate of at least about 2 micrometers per hour.
-